

WHAT IS CLAIMED IS:

1. A method for detecting a nucleic acid target sequence comprising:
 - a) hybridizing a signal primer comprising an adapter sequence to the target sequence, whereby a complement of the adapter sequence is produced;
 - b) hybridizing a reporter probe comprising a reporter moiety to the complement of the adapter sequence, whereby a double-stranded reporter moiety is produced, and;
 - c) detecting synthesis of the complement of the reporter moiety as an indication of the presence of the target sequence.
- 10 2. The method of Claim 1 wherein the double-stranded reporter moiety is produced upon hybridization of the reporter moiety to the complement of the adapter sequence.
- 15 3. The method of Claim 2 wherein the reporter moiety is a molecular beacon.
4. The method of Claim 1 wherein the double-stranded reporter moiety is produced upon synthesis of a complement of the reporter moiety.
- 20 5. The method of Claim 1 wherein the complement of the adapter sequence is synthesized concurrently with target amplification.
6. The method of Claim 5 wherein target amplification is by SDA, 3SR, NASBA, TMA or PCR.
- 25 7. The method of Claim 1 wherein the complement of the adapter sequence is synthesized without amplification of the target sequence.
8. The method of Claim 7 wherein the complement of the adapter sequence is displaced from the signal primer by extension of an upstream primer prior to hybridization to the reporter probe.
- 30 9. The method of Claim 1 wherein the reporter probe is non-extendible.
10. The method of Claim 1 wherein a change in fluorescence is detected.
- 35 11. The method of Claim 10 wherein the change in the fluorescence results directly from unfolding of a secondary structure.

12. The method of Claim 10 wherein the change in fluorescence results from cleavage or nicking of a restriction endonuclease recognition site in the double-stranded reporter moiety.
- 5 13. The method of Claim 10 wherein the change in fluorescence is detected in real-time.
14. The method of Claim 10 wherein the change in fluorescence is detected at a selected endpoint in the reaction.
- 10 15. The method of Claim 1 wherein the reporter moiety is labeled with a fluorescent donor/quencher dye pair.
16. The method of Claim 1 wherein the reporter moiety is selected from the group consisting of secondary structures and specialized sequences.
- 15 17. The method of Claim 16 wherein the double-stranded reporter moiety is detected by unfolding of a hairpin structure, unfolding of a G-quartet structure or nicking or cleavage of a restriction endonuclease recognition site.
- 20 18. The method of Claim 1 which comprises multiple signal primers, each signal primer having a separately detectable adapter sequence.
19. The method of Claim 18 wherein each signal primer hybridizes to a different sequence variant of the target sequence.
- 25 20. A method for detecting amplification of a target sequence comprising, in an amplification reaction:
- a) hybridizing a signal primer comprising an adapter sequence to the target sequence;
 - b) extending the signal primer on the target sequence to produce an extension product;
 - 30 c) hybridizing an amplification primer to the extension product and extending the amplification primer to synthesize a complement of the adapter sequence;
 - d) hybridizing to the complement of the adapter sequence a reporter probe comprising a reporter moiety, whereby a double-stranded reporter moiety is produced;
 - e) detecting the double-stranded reporter moiety as an indication of amplification of the target sequence.

21. The method of Claim 20 wherein the double-stranded reporter moiety is produced upon hybridization of the reporter moiety to the complement of the adapter sequence.
22. The method of Claim 21 wherein the reporter is a molecular beacon.
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23. The method of Claim 20 wherein the double-stranded reporter moiety is produced upon synthesis of a complement of the reporter moiety
24. The method of Claim 20 wherein the target sequence is amplified by SDA, PCR, 3SR, TMA or NASBA.
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25. The method of Claim 20 wherein a change in fluorescence is detected.
26. The method of Claim 25 wherein the change in fluorescence is detected in real-time.
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27. The method of Claim 25 wherein the change in fluorescence is detected at a selected end-point in the amplification reaction.
28. The method of Claim 20 wherein the reporter moiety is labeled with a fluorescent donor/quencher dye pair.
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29. The method of Claim 20 wherein the reporter moiety is selected from the group consisting of secondary structures and specialized sequences.
30. The method of Claim 29 wherein the double-stranded reporter moiety is detected by unfolding of a hairpin structure, unfolding of a G-quartet or by nicking or cleavage of a restriction endonuclease recognition site.
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31. The method of Claim 29 wherein a change in the fluorescence results directly from unfolding of a secondary structure.
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32. The method of Claim 29 wherein a change in fluorescence results from cleavage or nicking of a restriction endonuclease recognition site in the double-stranded reporter moiety.
33. The method of Claim 20 wherein the reporter probe is non-extendible.
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34. The method of Claim 20 which comprises multiple signal primers, each signal primer having a separately detectable adapter sequence.
- 5 35. The method of Claim 34 wherein each signal primer hybridizes to a different sequence variant of the target sequence.
- 10 36. A method for detecting a nucleic acid target sequence comprising:
 a) hybridizing a signal primer comprising an adapter sequence to the target sequence such that the adapter sequence produces a 5' overhang;
 b) synthesizing a complement of the adapter sequence by extension of the hybridized target sequence;
 c) hybridizing a reporter probe comprising a reporter moiety to the complement of the adapter sequence, whereby a double-stranded reporter moiety is produced, and;
 d) detecting the double-stranded reporter moiety as an indication of the presence of the target sequence.
- 15 37. The method of Claim 36 wherein the double-stranded reporter moiety is produced upon hybridization of the reporter moiety to the complement of the adapter sequence.
- 20 38. The method of Claim 37 wherein the reporter is a molecular beacon.
- 25 39. The method of Claim 36 wherein the double-stranded reporter moiety is produced upon synthesis of a complement of the reporter moiety
- 30 40. The method of Claim 36 wherein the double-stranded reporter moiety is detected by unfolding of a secondary structure or by means of a specialized sequence.
41. The method of Claim 40 wherein unfolding of a hairpin structure or a G-quarter structure is detected.
- 35 42. The method of Claim 40 wherein cleavage or nicking of a restriction endonuclease recognition site is detected.
43. The method of Claim 36 wherein a change in fluorescence is detected.

44. The method of Claim 43 wherein the reporter moiety is labeled with a donor/quencher dye pair.
45. The method of Claim 36 wherein the signal primer or the reporter probe is non-extendible.
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46. The method of Claim 36 which comprises multiple signal primers, each signal primer having a separately detectable adapter sequence.
47. The method of Claim 46 wherein each signal primer hybridizes to a different sequence variant
10 of the target sequence.
48. A set of oligonucleotides for detecting a target sequence comprising:
 - a) an unlabeled signal primer comprising a single oligonucleotide having a 3' target binding sequence and a 5' adapter sequence, and;
 - b) a reporter probe comprising a 5' reporter moiety and 3' sequence which is substantially identical to the adapter sequence.
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49. The set of oligonucleotides of Claim 48 further comprising a second signal primer having an adapter sequence which is substantially identical to an adapter sequence of a first signal primer.
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50. The set of oligonucleotides of Claim 48 further comprising a second signal primer having an adapter sequence which is different from an adapter sequence of a first signal primer.
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51. The set of oligonucleotides of Claim 48 wherein the reporter moiety is labeled.
52. The set of oligonucleotides of Claim 51 wherein the reporter moiety is labeled with a fluorescent donor/quencher dye pair.
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53. The set of oligonucleotides of Claim 48 wherein the reporter moiety is selected from the group consisting of secondary structures and specialized sequences.
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54. The set of oligonucleotides of Claim 53 wherein the reporter moiety is selected from the group consisting of hairpins, G-quartets and restriction endonuclease recognition sites.
55. The set of oligonucleotides of Claim 48 wherein the reporter probe is non-extendible.

56. An oligonucleotide comprising a reporter moiety and nucleotides 15-37 of SEQ ID NO:2, nucleotides 10-34 of SEQ ID NO:15, nucleotides 16-40 of SEQ ID NO:16, nucleotides 16-35 of SEQ ID NO:17, nucleotides 16-30 of SEQ ID NO:18, nucleotides 16-40 of SEQ ID NO:19 or nucleotides 19-43 of SEQ ID NO:20.
57. The oligonucleotide of Claim 56 selected from the group consisting of SEQ ID NO:2, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19 and SEQ ID NO:20.
- 10 58. An oligonucleotide comprising the target binding sequence of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13 or SEQ ID NO:14 and an adapter sequence.
- 15 59. The oligonucleotide of Claim 58 selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13 and SEQ ID NO:14.

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